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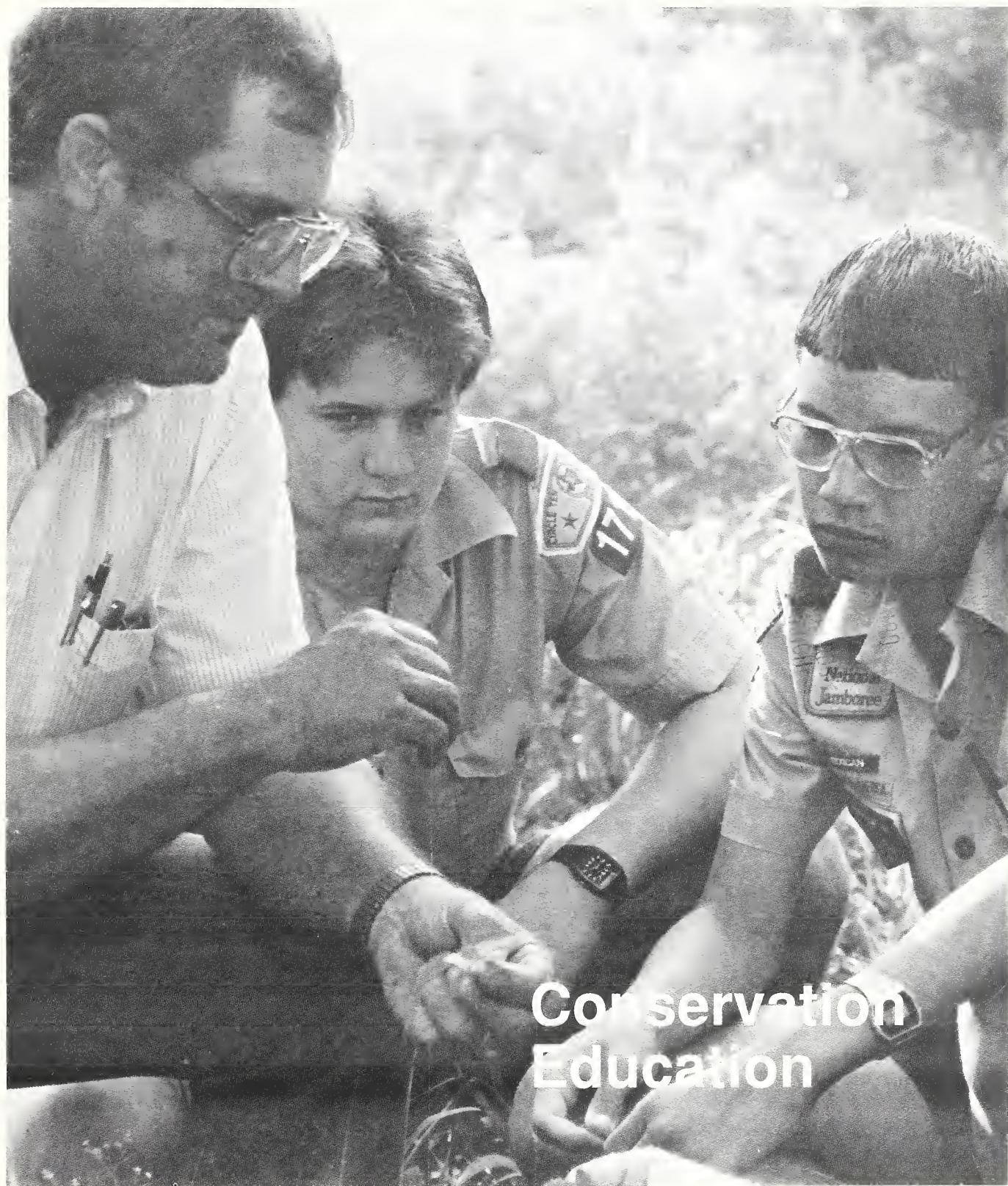
and **Soil Water Conservation**

United States
Department of
Agriculture
Soil
Conservation
News

FEBRUARY 1990

Volume 10, Number 11

**Conservation
Education**



Cover: Virgil Helm, SCS district conservationist from Dallas, Tex., talks to Scouts about plant identification at Boy Scout Merit Badge Camp, July 1989. (Photo by Pat Hood-Greenberg.)

Comments from the SCS Chief:

Soil and Water Conservation News is the official magazine of the Soil Conservation Service. The Secretary of Agriculture has determined that publication of this periodical is necessary in the transaction of public business required by law of this Department. Use of funds for printing *Soil and Water Conservation News* has been approved by the Director of the Office of Management and Budget. *Soil and Water Conservation News* (ISSN-0199-9060) is published 12 times a year. Postage paid at Washington, D.C.

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Subscriptions
\$8.50 per year domestic; \$10.65, foreign. Send subscription orders to: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

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Conservation Education: A Key to Better Stewardship

Education is probably the most important means of achieving any goal. As we go about our jobs of doing conservation work, we must be sure we are also teaching conservation. Conservation education teaches young people about the agriculture and the positive contributions we can make to the environment while still keeping production agriculture viable. Teaching our Nation's youth about the ways farmers and ranchers deal with conservation issues while maintaining production on their land can help instill the stewardship ethic in these young people.

Education about urban conservation issues is important, as well, to increase awareness of the relationship of soil erosion to water quality. Young people need to learn that urban runoff can be a major source of contamination in water bodies, stemming from care of golf courses, lawns, and other urban areas. And also, that plants and grass prevent soil loss that subsequently affects water quality.

Conservation education can take many forms. For example, every 4 years the Boy Scouts of America hold a jamboree that attracts nearly 30,000 Scouts and Explorers of all ages, plus another several hundred thousand visitors. SCS and the conservation districts participated in the 1989 jamboree at Fort A.P. Hill in Virginia, and, by all accounts, had one of the most popular exhibits.

In this issue, we highlight our conservation education partnerships with the Boy Scouts and with other groups, such as the National Association of Conservation Districts, the Girl Scouts of the U.S.A., the General Federation of Women's Clubs, and the National Science Teachers Association. We report on innovative projects, such as a demonstration farm in Ohio, an environmental resource center in Arizona, an annual "envirothon" where students compete for awards, an elementary school curriculum that teaches children about soils, and the manager of a Soil Conservation District in Maryland who puts on a skit in which he plays all the roles to teach children about advances in farming. We also present top environmental teachers of the year.

In addition, conservation education invites young people to investigate careers in the conservation field where they can work independently and out-of-doors, becoming a part of a community. Positions as professional resource conservationists also offer rewarding challenges for those who are versatile and interested in helping others conserve soil and water.

It seems to me that if we continue to expose our young people to the vast world of opportunities open to them, and to the many choices they have, we can expect that some of the best of them will be encouraged to make their life's work in agriculture and conservation. And, even those who don't, will have learned valuable lessons that will benefit them and society all their lives.



Conservation Education

Pond Project Leads To Education Center

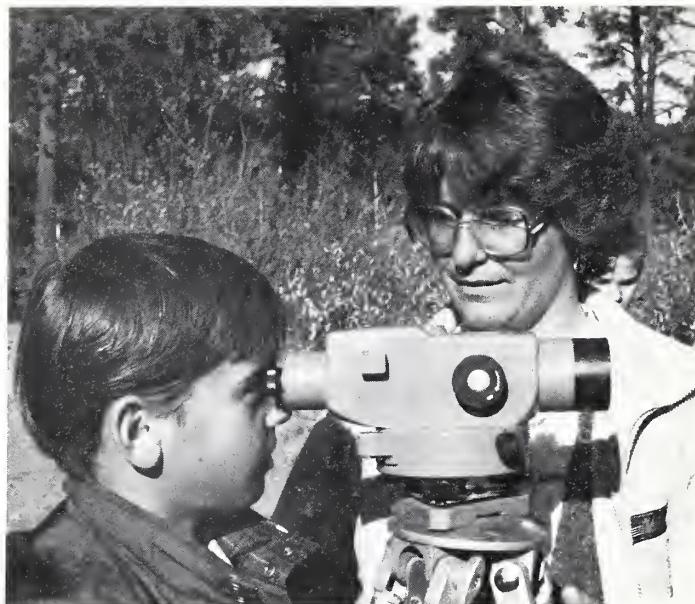
"IN THE BEGINNING, we had a vision, a plan, and less than a dozen adults and students," recalled Jim David, biology teacher at Flagstaff Junior High School (JHS). "We called it the Pond Project."

Nearly 15 years, two National Association of Conservation Districts awards, and hundreds of thousands of students later, the 3-acre Pond had grown into the Resource Center for Environmental Education (RCEE). It has a \$60,000 budget, a staff of four, a place to work, and many more requests for conservation education work than ever envisioned.

"The Center gives students a chance to see the people and their jobs and to learn about possible environmental careers for themselves," said Dave Bennett, earth science teacher at Coconino High School.

Stephanie Yard, a Soil Conservation Service area engineer at Flagstaff, Ariz., was a ninth grader at Flagstaff JHS when the Pond Project began. Students like Yard helped plan, design, and install the Pond.

"Working on the Pond Project helped me learn about the environ-



Stephanie Yard, SCS area engineer, shows surveying procedures at Pond Project to Mike Lyons, fifth grader at Marshall School, Flagstaff, Ariz. (SCS photo.)

ment—that by caring for it, we can make a difference," said Yard. "We felt we were working members of the community."

"The Pond Project sparked my interest in the outdoors," Yard recalled. "It helped lead me into civil engineering with an emphasis toward natural resources."

Begin in 1975, the Pond Project showed how successful conservation education can be, and how necessary it is. Realizing the need for a formal program and a staff to satisfy conservation education needs in Coconino County, SCS and the Coconino Natural Resource Conservation District (NRCD) helped establish the RCEE in 1979 as the educational function of the District.

Program emphasis at the RCEE has been threefold. The Center staff makes classroom presentations on natural resources, provides inservice training for teachers in natural resources, and as-

sists in developing outdoor classrooms.

In the 1988-89 school year, RCEE staff made 1,425 program presentations to more than 35,000 students. They assisted with or coordinated four inservice training workshops for 77 teachers. They wrote "Stepping Stones: A Practical Guide To Setting Up An Environmental Education Center."

The Coconino NRCD was able to help provide educational assistance to other NRCD's in Arizona. They sponsored State financial support for setting up four new centers, to be modeled after the RCEE.

"We teach important ecological concepts," said Sue Lowry, RCEE director. "And we teach students how to make positive contributions to their community."

James E. Alam, district conservationist, SCS, Flagstaff, Ariz.

Partners in

Women's Clubs Help Conservation

ONE HUNDRED YEARS ago, a group of pioneering women representing many individual women's clubs, met in New York City to improve their local communities. To better coordinate their volunteer work, they formed the General Federation of Women's Clubs (GFWC).

Today, GFWC is the largest, oldest, nondenominational, nonpartisan, international volunteer service organization of women in the world. The Soil Conservation Service is assisting their volunteer efforts.

GFWC packs a powerful volunteer "punch"—over 10 million members worldwide, including nearly 1/2 million in 9,000 clubs in the United States, plus junior and "juniorette" clubs.

GFWC has supported and participated in natural resource conservation for most of its 100 years. Six years ago, SCS and GFWC joined in a cooperative volunteer effort called "The World At Your Feet" program to help clubs learn about local natural resources and how to help manage them.

"The World At Your Feet features club conservation projects,"

said Tom Levermann, SCS Educational Relations head. "It ideally complements the Earth Team, which stresses individual volunteer action.

"SCS has program outlines in kits that we've distributed to all

SCS State offices and to interested GFWC club representatives," added Levermann.

The program has three phases: club awareness, club and community awareness, and club and community action.



Volunteers, assembled by the Manistique, Mich., Club of GFWC, plant tree saplings along river bank as part of club's participation in "The World At Your Feet" Program. Manistique was the national Program winner. (Photo by Marie D. Grover.)

GFWC Activity Highlights

A few of the local GFWC club projects in The World At Your Feet program during the last 2 years include:

New Hampshire—joined watershed council; supported Merrimack River projects; helped protect State forests.

Massachusetts—nurtured "victory" garden and donated produce to needy.

New York—served on educational center boards; volunteered as guides and teachers for school groups.

Maryland—participated in "Save The Bay" activities; influenced passage of State bill banning phosphates in detergents.

Virginia—distributed many "Save The

Forest" kits to schools; coordinated gypsy moth-control effort.

Florida—designed, printed, and distributed conservation coloring books; staged conservation coloring contest.

Arkansas—helped buy land for wildlife; created reservoirs to conserve water and control runoff.

Montana—sponsored conservation "play"-acting group that traveled Statewide.

California—helped revegetate campgrounds; repaired and reconstructed Pacific Crest Trail; rehabilitated nature center; worked on water conservation; stood watches on fire towers.

Conservation

First, GFWC club representatives meet locally with SCS and other natural resource organizations to learn about major resource issues in their community. They learn how resources are managed and conserved. They discover how their clubs can assist in natural resource conservation.

Second, the women decide on problems to work on. They get specialized information, map out a volunteer assistance campaign, and coordinate with local service organizations.

Third, they act to help get conservation "onto the land."

GFWC club program participants may choose activities in wildlife habitat improvement, water quality management, erosion control, beautification, and conservation education.

SCS honors the participating club having the best activities in the past 2 years; other participating clubs receive certificates.

In the past 2 years, club reports show nearly 112,000 volunteer hours, over 3,300 projects, and over \$200,000 contributed during program participation.

"We thank SCS for guidance and assistance and for support of The World At Your Feet program by SCS Chief Wilson Scaling," said Vi Thornburg, GFWC chairperson for natural resources. "We look forward to continuing our cooperative efforts in the 1990's."

Ted Kupelian, public affairs specialist, SCS, Washington, D.C.

Girl Scouts To Study Resources, Careers

WIDER opportunities" are special events sponsored by Girl Scouts of the USA (GSUSA) to encourage teenage Girl Scouts to travel, meet new people, and try out career options. And the Soil Conservation Service is part of the picture. GSUSA plans ways to set up hands-on learning experiences that will introduce the girls to many natural resource-related professionals. By including State and Federal agencies, GSUSA hopes to expand wider opportunities, and the opportunities for the girls.

In wider opportunities events, teenage Girl Scouts participate in 7 to 10 days of hands-on learning experiences in the natural resource field. The learning may take place in laboratories, in offices, or in the field.

The girls meet, work with, and learn from these natural resource professionals. The girls can explore and experience many career-related activities.

SCS and the Soil and Water Conservation Districts (SWCD) are among the Federal, State, and local agencies that GSUSA asked to identify sites and provide personnel to facilitate the girls' learning experiences during the summer months.

Another aspect of Girl Scouting is getting the girls involved in local action projects: first, to identify natural resource issues, and second, to find ways to help in their solution.

SCS field-office and SWCD staffs assist by meeting with adult GSUSA leaders to explain current natural resource conservation issues in their locality. SCS suggests solutions and ways to accomplish them. Then the leaders set up local Girl Scout projects or activities. Such projects provide the girls important learning experiences and help them see the link between individuals, organizations, and the world of natural resources.

SCS and GSUSA have had a long, close history of partnership in the conservation of our natural resources. SCS has prepared conservation plans for many of the Girl Scout council-owned properties.

SCS provided technical and educational planning assistance when GSUSA developed its Camp of Tomorrow at the Edith Macy Conference Center, in Westchester County, N.Y.

Betty F. Pilsbury, GSUSA national president, said that developing their personal awareness, through experience, is a prime way to encourage Girl Scouts to look at natural resource conservation as a career option.

SCS helps GSUSA bring its Girl Scouts together with natural resource conservation, wider career options, and local natural resource issues and problems.

Carolyn L. Kennedy, director, Outdoor Education, Girl Scouts of the U.S.A., New York, N.Y., and **Thomas W. Levermann**, head, Educational Relations, SCS, Wash., D.C.

Thousands of science teachers from all over the country made their miniature soil profiles. And they loved it!

SCS Exhibits For Science Teachers

THIS 'HANDS-ON' you're going to love to do!" Jim Carley, Soil Conservation Service State soil scientist from Spokane, Wash., told teachers standing at the SCS soil profile worktable.

Thousands of science teachers from all over the country made their miniature soil profiles. And they loved it!

They were among nearly 12,000 science teachers, curriculum advisors, and administrators attending the National Science Teachers Association (NSTA) annual convention in Seattle, Wash., April 6-9, 1989.

The teachers gave papers, attended workshops, took tours, and visited exhibits featuring textbooks, scientific equipment, and many related aspects of science education.

One of nearly 300 exhibitors, SCS set up and ran a multifaceted conservation education exhibit in a 20- by 30-foot "island" booth.

SCS has worked closely with NSTA, the largest science teacher organization in the United States, for over 15 years. They have exhibited at the last six NSTA conventions.

"With this Broadax silt loam soil profile," Carley continued,



Students, as well as science teachers, make miniature soil profiles in SCS exhibit at NSTA Convention. (SCS photo.)

"you can show your students the four horizons or soil layers.

"Each horizon is separated in nature by color, structure, texture, and organic matter in the formation process. Our SCS handout sheets will help you better understand this."

Long lines of teachers worked their way along each side of the 4- by 8-foot soil profile worktable all day, every day for 4 days. Russ Pringle, area soil scientist from Olympia, Wash., helped the teachers scoop, tamp, stopper, and tape their vials.

Joe Holtrop and Lyle Fitch, King County (Wash.) Conservation District resource specialists, Chuck Natsuhara, SCS soil conservationist from Renton, Wash., and Roberta Pringle, SCS volunteer, also assisted at the worktable.

Roberta Pringle, wife of Russ Pringle, is a former teacher. She said she felt like "a fish back in the water again" while assisting. She

handed out Broadax soils information sheets and the SCS overhead transparencies, "A Soil Profile" and "A Soil Ecosystem."

"Be sure to visit the SCS publication tables and the SnoTel display," she told visitors. "And there's lots of help for you and your students at the water quality and soil-testing tables."

At the flashing SnoTel display, Bill Fecke, Resources Inventory soil conservationist from SCS National Headquarters in Washington, D.C. (NHQ), and Laurel Grimstead, computer systems analyst from Portland, Ore., showed the need and value of snow telemetry and water supply forecasting. They provided information on a new program, Adopt A SnoTel Site, that teachers may be able to set up for their schools.

Teachers took all available information from Charles Terrell, SCS water quality specialist from NHQ. Fred Kaisaki, soil scientist from the National Soil Survey Laboratory, Lincoln, Neb., showed them how to test soil for salinity, bulk density, and pH.

Educational relations specialists from NHQ talked to teachers about SCS publications and how SCS can help educators.

"The science teachers visiting the SCS exhibit learned a great deal about soil and water as natural resources and how they can be used wisely," said Carley. "The assistance SCS can provide these educators today will pay dividends in the future."

Paul G. DuMont, associate editor, *Soil & Water Conservation News*, SCS, Washington D.C.

District Teaches With Soil Tables

BILL CLARK IS A busy man! Often at weekend events and outdoor sessions, he needed to set up a quick, easy learning experience for soil conservation.

As district manager for the Calvert Soil Conservation District in Prince Frederick, Md., he needed something portable, something to deliver an immediate "hands-on" message. So over several years, Clark built three different portable exhibit tables to deliver his soil conservation message.

"The idea is to have something different each year to get people—especially kids—interested," Clark said. "Now people won't say 'Oh, I saw that one last year.' We can go 3 years without repeating tables and educational topics."

The first, a soil profile table, has six divisions. The first five divisions have layers making up a typical soil profile: small rocks or pebbles, parent material, subsoil, top soil, and organic material.

The sixth division might hold a soil peculiar to a region such as mottled soil containing iron oxide. Cubbyholes around the table hold plastic tubes, discs, and stoppers. Wooden dowels are for packing soil and discs into the tubes.

"We started targeting the younger students because there was such a demand from elementary school teachers."



"This table fit my requirements pretty well," Clark said. "It costs about \$18 not including labor. It's about 3 by 6 feet and made from a single sheet of plywood. One person can handle it."

"It's perfect for teaching both conservation principles and soil formation. After a brief presentation, people take the tubes and, starting with the small rocks, move along the table and make their own soil profiles."

The second table is slightly inclined. Its four divisions hold a clay soil, a sandy soil, a top soil and a piece of grassed sod.

"We pour water down all four divisions simultaneously," Clark said. "Water running off the exposed soil is full of sediment. The demonstration usually leaves no doubt about erosion problems associated with unprotected soil—especially the looser and more valuable top soil. Of course, the grassed sod has very clear water running through it."

The third table, a new one, is like a big sand box with a remote-

controlled backhoe and tractor. It is used to show how to control sediment and erosion around water bodies.

"This table really draws the crowds at fairs and gives me the opportunity to make my presentation on conservation," Clark said. "The table is a great success. The kids love it!"

"Our district believes it is very important to teach our young citizens about natural resources and how to conserve them," Clark said. "This hands-on approach works wonderfully with children and grownups alike."

Clark is willing to send instructions—complete with materials needed, estimated costs, and dimensions—to anyone who requests them: Bill Clark, District Manager, Calvert Soil Conservation District, P. O. Box 657, Prince Frederick, MD 20678.

Kathleen Diehl, contributing editor, *Soil & Water Conservation News*, SCS, Washington, D.C.

Conservation Teachers

NACD Honors Conservation Teachers and Districts

CONSERVATION education awards will be presented to teachers and conservation districts at the National Association of Conservation Districts' (NACD) national convention in February.

This year's award winners carried out a wide range of innovative activities—from landscaping eroding areas on their schoolgrounds, to presenting a "Food for America" program to some 500 elementary students, to developing a comprehensive soils program involving hands-on experiences and field trips.

Cosponsored by the Deutz-Allis Corporation, the program fosters awareness and appreciation of the value of conservation education and stimulates efforts by teachers and conservation districts to advance the wise use, protection, and enhancement of the Nation's soil, water, and related natural resources, according to NACD President Robert Wetherbee.

First and second place national teacher award winners are Mary Bourbonnais, Okla., and Linda Bennett Milioti, Md., respectively. Other regional winners include Jeanette Jarrett, N.C., Louis



First place National Conservation Teacher of the Year, Mary Bourbonnais, works with children on a Thanksgiving project.

Oberneufemann, Ill., John Rist, S.Dak., Steven Den, Colo., and Judy Gardner, Hawaii.

First and second place national district award winners are the Palm Beach Soil and Water Conservation District (SWCD), Fla., and the Oxford County SWCD, Maine, respectively.

Other regional district winners include Vernon County SWCD, Mo., Lower Delta SWCD, La., Papio-Missouri River Natural Resource District, Nebr., Morgan Soil Conservation District (SCD), Colo., and North Side SCD, Idaho.

First Place, Teacher: Mary Bourbonnais, a third grade teacher at the Bethel Elementary School in Shawnee, Okla., learned soil stewardship early, growing up on a farm where the conservation ethic was paramount.

"I consider the job of a teacher to be to prepare children to survive on their own," said Bourbonnais. "Teaching in the lower grades is a multidisciplinary process—you teach everything. It just

seems natural to work conservation into every subject."

She taught her students how conservation decisions can affect everyday economics by creating a kingdom called "Paradise Island," located on three tables in her classroom.

The students hauled in soil and made rivers. They created little characters out of walnuts, including a king, queen, and their subjects. The students then took on three roles: consumer, producer, and investor; they made decisions affecting the conservation of natural resources.

"The role playing was my guided part of the curriculum," Bourbonnais said. "However, once the kids got rolling, they also created a data bank of information on geographic location, climate, and lifestyles.

"I was often thrilled with their decision-making skills. Despite their young age, they made some surprisingly wise choices about caring for natural resources."

Second Place, Teacher: Linda Bennett Milioti, another former farm girl, helped her class analyze water quality along streams near the school, along a river, and on a Chesapeake Bay boat trip.

She organized students into three study groups; they took 5 years of soil and water data and entered it onto a computer. They also conducted opinion polls in the community.

In November 1989, the students held a forum, inviting State and local officials and community leaders. They presented the results of their studies, then asked the leaders hard questions about

and Districts

what could be done to improve water quality.

"One of the biggest lessons we all learned from this experience was how to get through to a community, and to the people who can make a difference," Milioti said. "The students not only had to learn whom to contact and how, but they had to do their homework and prepare hard evidence to support themselves when the contact was made."

First Place, District: The Palm Beach SWCD in West Palm Beach, Fla., won for developing a soils program, utilizing hands-on experiences for students from elementary to college level; and they prepared a teacher-training component. The district assisted in developing outdoor classrooms. They helped begin a wetlands education boardwalk project at the Everglades Youth Camp and helped establish a coastal plant nursery.

Second Place, District: The Oxford County SWCD in South Paris, Maine, won for its "Kids for Trees" program, among other projects; kindergarteners through 12th graders learn how to manage natural resources wisely by planting and managing a Christmas tree plantation.

The district developed newsletters, radio and television programs, and presented programs addressing roadside erosion, recycling, sedimentation, and erosion control.

Ruth Chenhall, education-information specialist, NACD, League City, Tex.

Education Materials Target Lower Grades

IMAGINE FOR A MOMENT that you are in the fourth grade. Your teacher comes into the classroom with a stack of comic books. COMIC BOOKS! In the classroom! What's going on here?

"We started targeting the younger students because there was such a demand from elementary school teachers," said Ruth Chenhall, National Association of Conservation Districts (NACD) education-information specialist.

In their expanded educational services, NACD introduced three new items in 1989 for kindergarten through fifth grade—one being a comic book.

"Amazing Soil Stories" is an activity book—in comic book format—for fourth and fifth grade students. It follows the hot air balloon adventures of Marty and Professor Bones as they discuss natural resource problems and their solutions. Student activities can be completed alone or as a class.

The California Association of Resource Conservation Districts originally produced "Amazing Soil Stories" and an accompanying teacher's guide.

"Many of the teachers don't have the background to develop their own conservation materials," Chenhall said. "What we were find-



New conservation education materials are available for lower elementary students..

ing is that if they didn't have education materials readily available, the subject didn't get taught."

"Water and Me" is a simple, 16-page book originally produced by the Southwest Minnesota Association of Soil and Water Conservation Districts employees. It is an activity/coloring book targeted for kindergarten through second grade students.

Another kindergarten through second grade product is "Land for Life, The Big Picture," a fold-out 18-by 22-inch activity poster. Drawings depict activities above the ground and in the soil. Children can color the pictures and work through the activities at home or in school. The poster is also ideal for distribution at fairs, field days, or in offices to young visitors.

How do you get these materials? How do you find out what else is available for upper grades? Contact your local conservation district office or the NACD Service Center, 408 E. Main, League City, TX 77573; (713) 332-3402.

Kathleen Diehl, contributing editor, *Soil & Water Conservation News*, SCS, Washington, D.C.

National JAMBOREE!

SCS Teaches, Demonstrates At Jamboree

GOOD MORNING, Jamboree Scouts. Welcome to the Soil Conservation Service demonstration area. I'm Helen..."

This morning Helen Jeter, SCS public affairs specialist in Richmond, Va., is greeting a new gathering of Scouts that has just reached the SCS area.

"...and conservation really means wise use of resources," Jeter continues.

One of a dozen or so Federal and State agencies providing natural resource exhibits inside the Environmental Conservation Demonstration Area this year, SCS has been teaching and demonstrating soil and water conservation at Scout jamborees since the 1950's.



The Boy Scouts of America (BSA) hold their National Jamboree every 4 years. Nearly 30,000 Boy and Explorer Scouts are attending this jamboree, held July 30-August 8, 1989, at Fort A. P. Hill, near Bowling Green, Va. Scout leaders and their guests, cub

scouts, jamboree staff, and other visitors for special events swelled the total attendance to well over 300,000.

"...the theme is 'Conservation Is Your Future,'" says Jeter. "You'll discover how water, plants, people, air, energy, and animals are linked."

The shaded, 4-acre SCS demonstration area has nine stations or stops covering soil runoff, mulching, conservation gardening, sand dunes, soil monoliths, soil profiles, wetland plants, water quality, and homesite conservation, plus a "rapping it up" site.



Kenneth Carter, SCS water quality specialist from Richmond, Va., describes relationship of good land use to water quality. (Photo by Helen Jeter.)



Located inside this conservation area is SCS demonstration site having nine stations to help Scouts better learn about soil and water conservation. (Photo by Helen Jeter.)

The SCS onsite staff members take turns walking eager audiences through all the stations. A complete go-around for each "leader" takes 20-30 minutes. Everybody gets across the main conservation facts and lessons, but each person's talk is different.

"...learn about the many different kinds of conservation practices," Jeter is finishing her introductory remarks.

"And we have a new station this year dealing with water quality. Now, let's begin our conservation tour and move to the first demonstration."

During Jeter's talk, John Kimmons, SCS district conservationist from La Plata, Md., is at the first station talking about soil runoff and the importance of plant cover



Russell Mader, SCS district conservationist from Prince Frederick, Md., assists Scouts with requirements for soil and water conservation badge. (Photo by Helen Jeter.)



Boy Scouts and Scout leaders make miniature soil profiles in plastic tubes at one of the SCS demonstration site stations. (Photo by Kathleen Diehl.)

to protect against soil erosion.

Kimmons gets three volunteers to help with the soil runoff demonstration: bare soil versus grassed soil versus mulched soil. Each volunteer, with a full-of-water sprinkler can, stands at the head of a raised soil box.

"OK! Here we go!" Kimmons shouts. "Countdown: 3, 2, 1, POUR!"

The Scouts see how much soil is washed off the bare ground, and how clear the water is that has trickled through the grass-covered soil.

Farther along the tour route, Jeffrey Mahood, SCS resource conservationist from Harrisburg, Pa., has finished quizzing his Scouts about the grassed waterway in the conservation garden.

"See the large piles of brush behind the garden?" Mahood asks one of the Scouts in his tow. "What are they used—"

A half-dozen youthful interjections of "rabbits," "mice," "turkeys," and "quail" stop his question in midword. "The kids are sharp," Mahood notes. "It's tough to keep ahead of them."

Ahead at the soil profile worktable, Christine Clarke, SCS soil resource specialist from Storrs, Conn., is helping and showing Scouts how to scoop the correct amount of parent material into a 6-inch plastic vial, then push a plastic disc in place with a dowel.

After the Scouts finish the other layers, Clarke adds, "Now you have your own miniature soil profile."

While these Scouts are scooping, capping, and labeling, still an-

Nearly 350 scouts earned Soil and Water Conservation Merit Badges, courtesy of the Soil Conservation Service, at the Boy Scout's National Jamboree.



SCS symbol in a fountain welcomes visitors to the demonstration site. (Photo by Kathleen Diehl.)

other group is ahead at the wetland plants plot.

"Besides fish and wildlife habitat, what other values do wetlands have to—"

A sea of waving hands and eager faces stops Leslie Welsch, SCS soil conservationist from Randolph, Vt., in midquestion. Welsch doesn't mind. He loves "know-it-alls."

"What are your first impressions when you compare these two contrasting houses and yards?" Darryl Majette, SCS soil conservationist from Lawrenceville, Va., poses to his khaki-clad audience, farther along the tour route at the homesite conservation station.

"Lots of grass on the right," "bare ground, standing water on the left," "fish pond on the right," "broken eaves and a cracked foun-

Soil & Water Conservation Merit Badge

NEARLY 350 SCOUTS earned Soil and Water Conservation Merit Badges, courtesy of the Soil Conservation Service, at the Boy Scouts of America (BSA) National Jamboree, held July 30-August 8, 1989, at Fort A. P. Hill, near Bowling Green, Va.

Another 650 Scouts did parts of this badge at the training and testing stations in the SCS and Hanover-Caroline Soil and Water Conservation District exhibits on the Merit Badge Midway.

When BSA started in 1911, they offered the Conservation Merit Badge. In 1940, they first offered the Soil Management Merit Badge. In 1952, they merged many requirements for the two badges into a new one—the Soil and Water Conservation Merit Badge; Scouts have earned nearly 3/4 million since 1952.



Soil and Water Conservation

Soil and Water Conservation Merit Badge.

SCS personnel wrote parts of this badge handbook in 1952 and parts of subsequent revisions (the latest in 1983).

The handbook covers what soil is, mishandled land, conservation practices, conservation in watersheds, the hydrologic cycle, water pollution, and what can be done to help.

Twenty other merit badges include conservation practices as part of their requirements.

Pat Hood-Greenberg, public affairs specialist, South National Technical Center, SCS, Ft. Worth, Tex.

dation on the left," and "sun panels in the roof on the right."

As Majette's "sharpies" continue comparisons between the "good" and "bad" houses and yards, George Ways, SCS district conservationist from Ashland, Va., is ahead "rapping" up the tour.

In just this short half hour, the rapport between Ways and his entourage has evolved from a guarded, insecure teacher-pupil relationship, to a more rowdy Scout-

master-Scout camaraderie, and finally to a big brother-little brother family feeling.

"You Scouts are going to do a lot of good in this world," Ways says as he punches their yellow passes and waves goodbye. "Thanks for visiting SCS."

Paul G. DuMont, associate editor, *Soil & Water Conservation News*, SCS, Washington, D.C.

"I get a good feeling working with the kids because they want to learn...who knows, they may want to enter our business. It is just one more step to the future."

SCS Staff Teaches Conservation Merit Badge

SERVING metropolitan areas raises some unique opportunities for Soil Conservation Service employees.

"We want to reach youngsters with the resource conservation education message," said Virgil Helm, SCS district conservationist in Dallas. "But in metropolitan areas, there are too many of them and too few of us to work with them individually or in small classes. We can maximize our efforts through participatory programs, such as conservation merit badge camps with the Boy Scouts of America (BSA)."

The BSA National Council owns camps ranging from a 5-acre site in the Florida Keys to the 138,000-acre Philmont Boy Scout Ranch in New Mexico. All national BSA camps must have up-to-date SCS conservation plans.

With the help of the SCS area office staff, Helm and other SCS'ers set up and taught two 1-week sessions at Camp Wisdom in Duncanville, Tex. About 150 Dallas-area Scouts learned about soils, watersheds, and practices to control erosion. They completed many of the requirements for the Soil and Water Conservation Merit Badge.



District conservationist Virgil Helm (Dallas) helps Boy Scouts with merit badges.

David Smith, information resources management coordinator at SCS, Richmond, Va., believes that merit badges are career exploration opportunities. Every 4 years, SCS participates in the National Scout Jamboree, held in 1989 at Fort A.P. Hill in Bowling Green, Va., (see Jamboree story, pp. 10-12). SCS has been involved with the National Scout Jamboree since 1950. More than 32,000 boys and adult leaders attend the week-long affair. SCS National Headquarters sets up a conservation exhibit at the "Merit Badge Midway," and through the hard work of SCS staff members from around the country, more than a thousand boys are given the opportunity to learn about conservation.

"I get a good feeling working with the kids because they want to learn," says Smith. "We have touched the kids directly and can see results. Who knows, they may want to enter our business. It is just one more step to the future."

Dennis Gaster, SCS cartographer at the South National Technical Center in Ft. Worth, Tex., has been working with Scouts since 1971, and teaches the Soil and Wa-

ter Conservation Badge at BSA summer camps in Red River, N. Mex. He uses many SCS resources, including soil survey maps, aerial photographs, topographic maps, and wind and water erosion brochures.

"Teaching soil and water conservation to scouts makes me more aware of my own job and what SCS is really trying to do," said Gaster. "The outdoors is a great laboratory, especially for urban youths."

In addition to helping these boys earn Soil and Water Conservation Merit Badges, Gaster takes the Scouts on "High Adventure Backpacking Trips" into Colorado and Wyoming, where they learn about geology, plant and animal identification, and various conservation practices.

To start a merit badge camp in your area, contact your local BSA council. They can provide you with the necessary assistance, such as staff, location, merit badge requirements, and handbooks to help you get the camp started.

With this proven formula, merit badge camps at BSA outings provide interested SCS'ers a unique opportunity to reach an important segment of America's population—the youth—and to teach them about conservation.

Pat Hood-Greenberg, public affairs specialist, South National Technical Center, SCS, Ft. Worth, Tex.

The competition exposed students to soil, forestry, aquatics, and current conservation issues...many...said they hoped to pursue careers in conservation....

Envirothon Teaches Resources, Teamwork

TWAS MAINE versus Massachusetts versus Ohio versus Pennsylvania, and the "cleanest water" would win!

At the Second National Envirothon competition, held in Spencer, Mass., August 19-22, 1989, Pennsylvania's Blue Mountain High School (HS) team was back to defend the title it won in 1988.

The competition theme was "Clean Water for the Future." Four teams, each with five high school students, would try to apply the theme in a management plan that each team would prepare for Thompson's Pond (Mass.) and its watershed.

Pennsylvania's Blue Mountain HS won the title again. The team's coach, Glen Luckinbell, said that only after months of study and group interaction do teams emerge as top competitors.

By combining the challenge of competition with the camaraderie of cooperation, this innovative conservation education program attracted the interest of students, teachers, conservation agencies, and private industry.

Pat Devlin, executive director of the Pennsylvania Association of Soil Conservation Districts (SCD), said the Envirothon is successful



Team coach and team members of Massachusetts champion Lunenberg High School Envirothon Team discuss plant growth.

because of support from State SCD's, Soil Conservation Service, and other resource-related State and Federal agencies.

The Southern Worcester County SCD collaborated with the Massachusetts Cooperative Extension Service (MCES) in hosting the Second Envirothon in the Buck Hill Conservation Center.

"MCES donated their 4-H Center for the event," said Peg Jorritsma, Southern Worcester County SCD district official. "We could not have held the competition without their support."

The envirothon concept originated in 1979 in three Pennsylvania counties. By 1989, over 2,100 students were participating in county, State, and national competitions.

After the 1989 Envirothon, the Massachusetts Association SCD received inquiries from at least 11 States, each interested in starting an envirothon.

Each five-student team surveyed all aspects of the Thompson Pond watershed. The better the members worked as "team players," the more effective their team's management plan would be.

Each team had 20 minutes to present its plan to the judges. Then team members answered questions for 10 minutes.

The competition exposed students to soil, forestry, aquatics, and current conservation issues, and tested their knowledge.

Many of the team players at the Envirothon said they hoped to pursue careers in conservation, in one form or another. And they hoped that curricula in national conservation education will be set up in colleges and universities.

Annette Spahr, public affairs intern, SCS Amherst, Mass.

"When the kids see the farm and what's being done, the expressions on their faces are worth the cost in time and money."

Conservation Education On The Farm

SHOWING TEACHERS and students the values and benefits of conservation practices on a well-managed farm was what the Western Ohio Education Association (WOEA) professional conference day was all about on October 11, 1989.

The picture the teachers and students saw about conservation education was worth much more than a thousand words of classroom talk.

The State-owned, 200-acre Sycamore Farm, northwest of Dayton, Ohio, is managed by the

Montgomery County Soil and Water Conservation District (SWCD) as a demonstration area for soil and water conservation management practices. Conservation education for teachers and students is also part of the Farm's objectives.

Vivian Daye, Loos Elementary School, Dayton, Ohio, was very enthusiastic about the WOEA visit to Sycamore Farm. "We are writing a curriculum on these subjects and need some ideas," she said. "We also have land we would like to develop."

Roger Millikin, SWCD program administrator, has been working WOEA Days for about 10 years. The locations vary depending on teacher needs and requests.

"We provide them 'in-service day' training related to soil and water," said Milliken. "This year the teachers wanted to learn about farming, from preparation to planting to marketing."

Steve Boeder, Soil Conservation Service district conservationist at Trotwood, helped show waterways, a block chute, and aluminum toe-wall structures built to reduce gully erosion.

"All the cropland is no-tilled," said Boeder. "Woodland and wildlife conservation are also planned and practiced."

"The Farm is run with funds earned by the District," added Boeder. "Many people volunteer their time and talent to make Sycamore Farm the learning environment it is."

Cindy Hanbuch, a WOEA Day presenter, finds it important to teach students that "food comes from somewhere other than plastic bags in the grocery store."

"When the kids see the farm and what's being done, the expressions on their faces are worth the cost in time and money," said Jim Helstern, a supervisor with the Montgomery County SWCD.

Perhaps Sycamore Farm, a real conservation farm, paints a picture worth more than a thousand words for these city children and the others who visit to learn about conservation.

Michelle Lohstroh, public affairs specialist, SCS, Columbus, Ohio



Teachers and students enjoy and prefer seeing conservation in action, such as on Sycamore Farm, rather than reading about such practices in books. (Photo by Michelle Lohstroh.)

Rea has been recruiting school kids into agriculture with his innovative skit for 5 years.

Farming Goes "Back To The Future"

HE LIMPED INTO the room, leaning heavily on his cane. His snowy white beard brushed the bib of his worn overalls as he turned to the class of somewhat startled young students.

"I'm a farmer," said the old man. "I've been farmin' all my life, right here in Montgomery County."

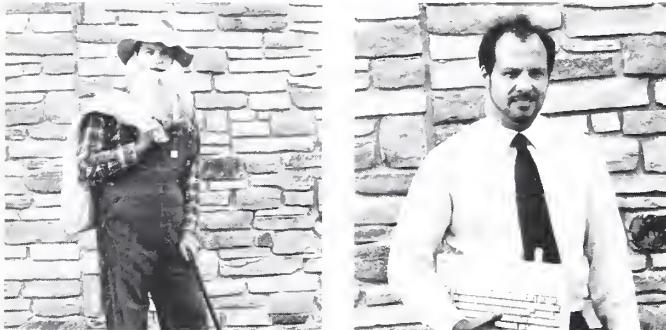
The students looked at each other in surprise. Farming in Montgomery County? They looked out the window, wondering if they had missed something. They saw only city pavement and tall buildings.

"I know it's hard to believe," the old man continued, sensing their astonishment. "This county has always been big in agriculture. One-third of it is still farmed."

The farmer recalled how he had spent his childhood on the farm, waking before dawn, milking the cows, gathering eggs, and eating a hearty breakfast before he walked 5 miles to school.

"We did most everything by hand," he explained. "Oh, we had some machinery, like tractors, hay balers, and such. But mostly farming meant back-breaking labor."

"Things are different now," the old man said. "My son is coming in



As "old" and "modern" farmer, Marshall Rea, Montgomery County, Md., SCD district manager, dazzles Maryland students during his talk. Rea visits schools to promote natural resource careers. (Photo by Lissa Fox.)

right now to tell you all about modern farming."

The surprised students looked around the room and at the door, trying to spot the old man's son. As they searched, the old man turned his back to the room.

Off came the beard and the overalls. Out of his feed sack came a tie and a computer keyboard.

"Good afternoon," said the young businessman. "I'm a farmer. I've been farming all my life right here in Montgomery County."

The students laughed, delighted at the turn of events.

"Farming has changed a lot in the past century," said the 'son,' who is really Marshall Rea, district manager of the Montgomery Soil Conservation District. "Everything is done on a larger scale now: bigger tractors, more acreage, higher yields, plus computers."

"Agriculture is still the No. 1 industry in Maryland," added Rea. Then he challenged the students, "There may be a job in that industry for you!"

The students nodded, finally understanding how farming tied in with career day.

"Agriculture needs scientists to discover new ways to produce enough food to feed the world cheaply," Rea continued. "We

need foresters to teach us to manage the woods. And we need conservationists to help us to conserve our natural resources, to control soil erosion, and to improve water quality."

Rea has been recruiting students with his innovative skit for 5 years. He feels that one way to get young people in agricultural careers is to change their attitudes about farming.

"When city kids think about agriculture, they visualize dirt, hard labor, and a 'backwoods' mentality," said Rea. "Because of that image, agriculture and agricultural agencies have always had a problem attracting the best and the brightest."

Rea emphasizes how agriculturalists preserve natural resources and speaks glowingly of rewarding jobs with soil and water conservation districts and with the Soil Conservation Service.

"We want to educate and assist," explains Rea. "We teach farmers and developers to conserve soil and water quality. A job like this gives you the feeling that you're making a difference."

Lissa Fox, soil conservationist, SCS, Montgomery County, Md.

"The program makes effective use of visual aids that personalize and facilitate understanding of basic soils concepts...teachers can use them with minimal outside help or prior preparation."

Project Soil: 30 Minutes A Day

WHEN THE UPPER Hondo Soil and Water Conservation District Board decided to develop a conservation education curriculum to teach the basics of soils to elementary grade students in New Mexico, they turned to Mary Shanks, second grade teacher in Capitan, N. Mex.

To gain background information, Shanks became a member of the district Earth Team in January 1988. Her initial activities consisted of gathering information and brainstorming to organize these

materials into logical teaching methods. The program was named "Project Soil," and Shanks put in more than 300 hours of volunteer time developing it.

Project Soil can be effectively taught in 1 week through daily 30-minute sessions. Lesson plans cover the importance of soil, types of soil, soil erosion and its control, and an end-of-week review.

"The program makes effective use of visual aids that personalize and facilitate understanding of basic soils concepts," said Shanks. "These materials are conveniently packaged in a box, and teachers can use them with minimal outside help or prior preparation."

Project Soil is an effective tool with which to teach earth science objectives. It can be used in a whole-language approach with stories, creative writing, and art. It can also be used in combination with Soil Stewardship Week, out-

door classrooms, Project Learning Tree, Project Wild, and teacher workshops.

The curriculum has been field-tested in four schools in New Mexico. Plus, the New Mexico Museum of Natural History in Albuquerque wants to use the curriculum in its outreach activities with small rural schools in the State.

The Capitan School Board strongly supports Project Soil, as does the Ruidoso Women's Club, which supplies a backup teacher for Shanks. The New Mexico, Arizona, Utah, and Colorado State Associations of Conservation Districts also have pledged their support.

Leader Industries, a nonprofit organization in Hobbs, N. Mex., that employs physically impaired individuals, has produced kits. The New Mexico Section of the Soil and Water Conservation Society is helping to provide promotional materials, which include a logo, videotape, display, and brochure to promote Project Soil. For more information, write the Upper Hondo Soil and Water Conservation District, P.O. Box 900, Capitan, N. Mex. 88316.

"If Project Soil proves successful, it will be presented to the State Board of Education for possible inclusion in the State's mandatory curriculum," Shanks said.

Steven W. Kemp, public affairs specialist, SCS, Las Cruces, N. Mex.

Mary Shanks, of Capitan, N. Mex., teaches Project Soil to her second grade class. (SCS photo.)



Rangeland Camp for Young Floridians

"Listen!" "Do you hear that night-hawk?" "A gopher tortoise just went down in this burrow!"

Campers, who rose at 5:30 a.m. to be on a range site at sunrise to observe the many wildlife species that make the rangeland home, were observing the way kids do—with all their senses, and all at one time.

This was just a part of the Second Annual Rangeland Youth Camp, held for high school students August 7-9, 1989, at the Cloverleaf Camp in Lake Placid, Fla., to educate Florida's young people about rangelands. The Society for Range Management sponsored the camp.

At the camp, students gained a better appreciation and respect for

the beauty and benefits provided by rangelands. Through field trips, students learned to identify various range sites and their associated plants.

Experienced ranchers, professors, and Soil Conservation Service personnel supervised and taught the students. Material covered included how to manage and enhance existing rangelands so they provide maximum benefits for the user without damaging the land.

A Florida Game and Fresh Water Fish Commission wildlife biologist discussed wildlife management with the students on the site. Buck Island and Lykes Brother's Wild Island Ranches hosted visits so students could see how wildlife can flourish and beef cattle thrive together with proper rangeland management.

In addition to visits to live-stock and wildlife ranches and a sunrise breakfast on the range, campers learned about rangelands through evening lectures. Topics included range ecology, grazing management, and range improvement practices.

Although students participated in some form of learning activity much of the time, they also enjoyed supervised recreation, such as volleyball, Ping-pong, chess, swimming, and canoeing.

Ken Lackman, co-op student, SCS, Gainesville, Fla.

A Year Of Conservation

The Marion Soil and Water Conservation District (SWCD) devised a way to get the youth of the county involved in conservation matters.

They sponsor a competition with an ongoing series of annual contests. The student who performs best will be presented the Youth Conservationist of the Year Award in October 1990.

The Marion County Forestry Workshop kicked off the series of conservation events for the school year 1989-90. Held in September 1989, the workshop was designed to prepare students for the division forestry contest, a series of events that will be held later in the school year.

November 16th marked the start of the 1989 Soil Conservation Poster Contest held to celebrate Farm/City Week. The theme was "Soil and Water Conservation." Posters were displayed at the County Agriculture Center.

The essay contest, cosponsored by the Marion SWCD and the Florida Division of Forestry, was held in January. Contestants submitted four-page papers on "Using Trees to Reduce Erosion."

The 1990 Ocala Week Youth Fair will be held February 18-23. The Marion SWCD will sponsor a Conservation Landscape Contest. Future Farmers of America and Future Homemakers of America chapters and 4-H club members compete in the group category.

The Marion County 1990 Land Judging Contest will be March 16, with winners competing in the



Laurie Evans collects range plant specimens for pressing at Cloverleaf Camp in Lake Placid, Fla. (Photo by Sid Brantly.)

State Finals on March 30.

The 1990 Boyd Williams Public Speaking Contest will be April 5. The theme this year is "Conservation's Effect on Aquifer Recharge."

Ken Tipper, Earth Team volunteer, SCS, Ocala, Fla.

Students Learn Conservation First-Hand

The Monroe House farm symbolizes a well-rounded conservation lesson to a generation of fifth grade students at North Elementary School in Jonesboro, Ark.

That's because Paul House, North Elementary teacher and former Arkansas Association of Conservation Districts Conservation Educator of the Year, has conducted a conservation field day on his father's farm for the past 16 years.

What has evolved is a full-fledged field day with lessons and tours on the farm given by House and fellow fifth grade teachers, as well as demonstrations by the Arkansas Game and Fish Commis-

sion, the Arkansas Forestry Commission, and the Soil Conservation Service.

The House farm educates students in geology, history, social studies, and physical science.

In the forest areas of the farm where birds and animals take shelter, small plates are posted on trees to help the students identify them by their common and botanical names. The students also have an opportunity to gather interesting rocks and wildflowers on the farm at Crowley's Ridge.

Students view terraces, a small pond, and a diversion ditch, as well as locust trees that were put on the farm by the Civilian Conservation Corps (CCC) during the 1930's.

House said the students here come to appreciate the CCC's efforts on the farm once they realize that most of the work was done with handtools, mules, and wagons instead of today's modern bulldozers, dumptrucks, and hydraulic equipment.

House believes the most important lesson is the need to protect our natural resources. He said, "If these students begin to learn early the need for conservation and the need to keep taking care of the earth, then they will be more receptive to taking care of it as adults and will ensure its use for future generations."

At this year's field day, SCS showed students the effects of erosion on land with little or no vegetative cover. SCS discussed soils, soil

SCS employees Doug McClellan and Kari Mize in Jonesboro, Ark. are explaining the effects of water erosion on permanent cover and soil with varying amounts of crop residue to fifth grade students. (Photo by Randy Ferguson.)

surveys, engineering surveys, and various conservation practices.

The students learned how trees relate to the environment, the different uses of trees, and simple tree identification from the Arkansas Forestry Commission. They discussed with the Arkansas Game and Fish Commission the relationship of wildlife to the environment and the need to protect endangered species.

House said the fifth graders enjoy field days, especially those children who have never spent much time on a farm. "And hopefully they learn about conservation while they have a good time," he added.

Diana Monroe Despain, public affairs specialist, SCS, Jonesboro, Ark.

Outlook '90 Cassettes

Audio cassettes from the U.S. Department of Agriculture's Annual Agricultural Outlook Conference, Nov. 28-30, 1989, are now available.

USDA's 66th Annual Outlook Conference focused on agricultural prospects for 1990 and beyond. It also covered pending policy decisions that help to shape the course of agriculture in the future.

Cassettes can be purchased in three ways: singularly for \$6.00 each, 6 tapes for the price of 5 for \$29.95, or any 12 tapes for the price of 10 for \$59.95. There are 35 cassette topics to choose from. To get a copy of an order form or to place an order, call 800-423-2050.



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Conservation Calendar

February	2-6	American Sugarbeet Growers Association Convention, Washington, D.C.
	2-6	National Food Processors Association Convention, San Francisco, Calif.
	4-8	National Association of Conservation Districts Convention, San Diego, Calif.
	7	Southern Association of Agricultural Sciences, Little Rock, Ark.
	11-13	United Fresh Fruit and Vegetable Association Convention, San Antonio, Tex.
	11-16	Society for Range Management Annual Meeting, Reno, Nev.
	15-16	National Frozen Food Association Convention, Washington, D.C.
	15-20	American Association for the Advancement of Science Annual Meeting, New Orleans, La.
	20	American Simmental Association Convention, Alexandria, Va.
	21-23	National Corn Growers Association Annual Meeting, Phoenix, Ariz.
	25-27	National Governors Association Convention, Washington, D.C.
March	4-7	National American Wholesale Grocers Association Convention, New Orleans, La.
	6	Symposium of the Institute of Alternative Agriculture, Washington, D.C.
	15-16	Symposium of Sustainable Agriculture, Sacramento, Calif.
	20-24	Fire and Environment International Symposium, University of Tennessee, Knoxville, Tenn.
	25-29	National Grain & Feed Association Convention, Williamsburg, Va.
April	2-5	American Forage & Grassland Council Conference, Roanoke, Va.
	3-5	AgTechnology 90, Feiberg Publishing Company, St. Louis, Mo.
	9-12	Plant Resistance To Insects: Toward A More Sustainable Agriculture, Maryland Continuing Educational Center, College Park, Md.
	22-25	National Agri-Marketing Association 1990 Agri-Marketing Conference, St. Louis, Mo.
	22-25	U.S. Energy Council for Energy Awareness INFO 90, Dallas, Tex.